



ESDA6V1-5P6

ASD™

TRANSIL™ ARRAY FOR ESD PROTECTION

MAIN APPLICATIONS

Where transient overvoltage protection in ESD sensitive equipment is required, such as :

- Computers
- Printers
- Communication systems and cellular phones
- Video equipment

This device is particularly adapted to the protection of symmetrical signals.

FEATURES

- 5 Unidirectional Transil™ functions
- Breakdown voltage $V_{BR} = 6.1 \text{ V min.}$
- Low leakage current $< 500 \text{ nA}$
- Very small PCB area $< 2.6 \text{ mm}^2$

DESCRIPTION

The ESDA6V1-5P6 is a monolithic array designed to protect up to 5 lines against ESD transients. The device is ideal for situations where board space saving is required.

BENEFITS

- High ESD protection level
- High integration
- Suitable for high density boards

COMPLIES WITH THE FOLLOWING STANDARDS:

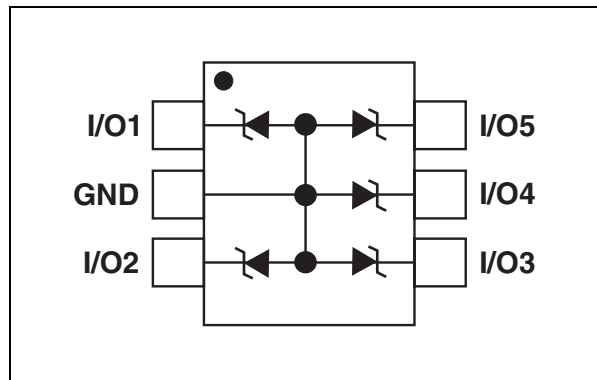
- IEC61000-4-2 level4:
 - 15kV (air discharge)
 - 8kV (contact discharge)
- MIL STD 883E-Method 3015-7: class3
 - 25kV HBM (Human Body Model)

Order Codes

Part Number	Marking
ESDA6V1-5P6	C



FUNCTIONAL DIAGRAM



ESDA6V1-5P6

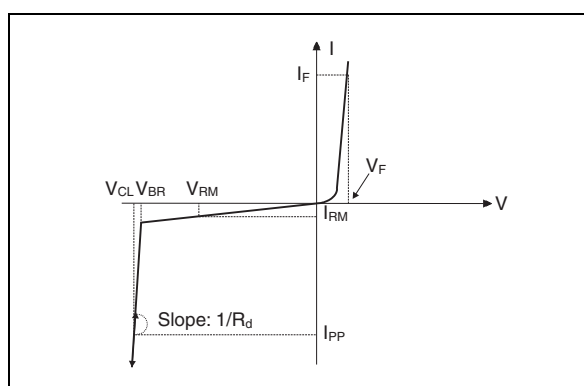
ABSOLUTE MAXIMUM RATING ($T_{amb} = 25^{\circ}\text{C}$)

Symbol	Parameter		Value	Unit
V_{PP}	ESD discharge	IEC61000-4-2 air discharge IEC61000-4-2 contact discharge	± 15 ± 8	kV
P_{PP}	Peak pulse power (8/20 μ s) (see note 1) T_j initial = T_{amb}		100	W
T_j	Junction temperature		125	$^{\circ}\text{C}$
T_{stg}	Storage temperature range		-55 to +150	$^{\circ}\text{C}$
T_L	Lead solder temperature (10 seconds duration)		260	$^{\circ}\text{C}$
T_{op}	Operating temperature range		-40 to +150	$^{\circ}\text{C}$

Note 1: for a surge greater than the maximum values, the diode will fail in short-circuit.

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$)

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{CL}	Clamping voltage
I_{RM}	Leakage current
I_{PP}	Peak pulse current
αT	Voltage temperature coefficient
V_F	Forward voltage drop
C	Capacitance
R_d	Dynamic resistance



Part Number	V_{BR} @ I_R			I_{RM} @ V_{RM}	R_d	αT	C
	min.	max.		max.	typ.	max.	typ. @ 0V
	V	V	mA	μA	V	$10^{-4}/^{\circ}\text{C}$	pF
ESDA6V1-5P6	6.1	7.2	1	0.5	3	4	50

Fig. 1: Peak power dissipation versus initial junction temperature.

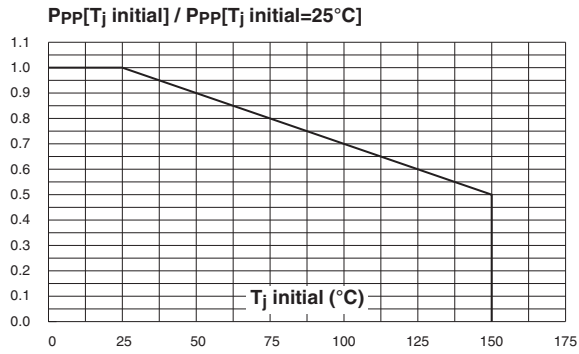


Fig. 2: Peak pulse power versus exponential pulse duration ($T_j \text{ initial} = 25^\circ\text{C}$).

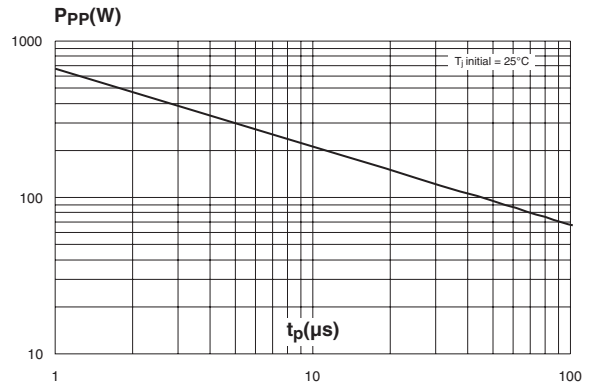


Fig. 3: Clamping voltage versus peak pulse current ($T_j \text{ initial} = 25^\circ\text{C}$). Rectangular waveform $t_p = 2.5\mu\text{s}$.

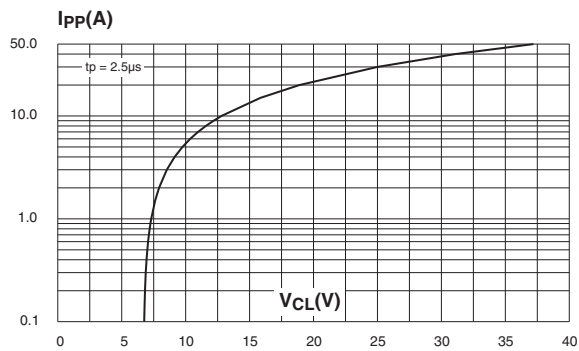


Fig. 4: Peak forward voltage drop versus peak forward current (typical values).

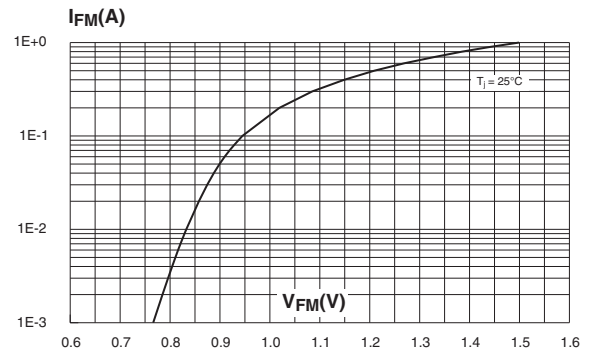


Fig. 5: Capacitance versus reverse applied voltage (typical values).

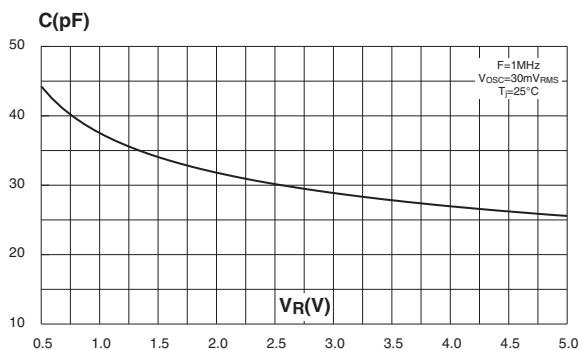


Fig. 6: Relative variation of leakage current versus junction temperature (typical values).

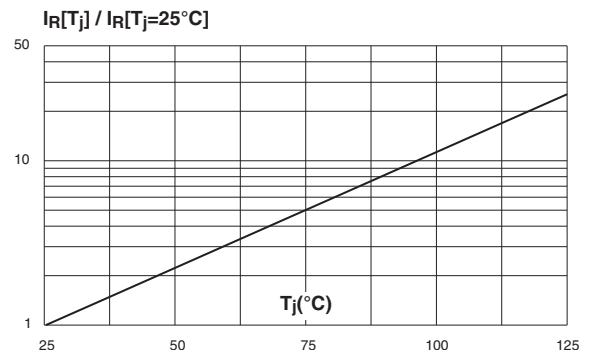


Fig. 7: ESD response @ $V_{PP}=8kV$ contact.

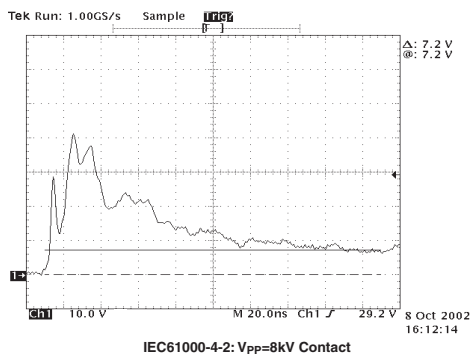
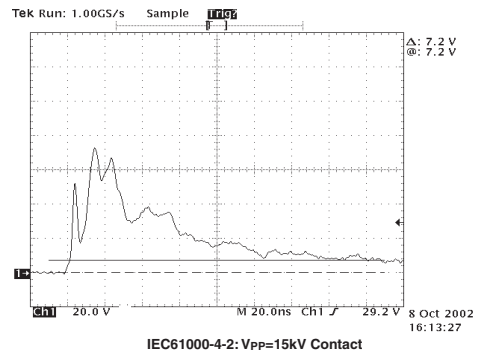
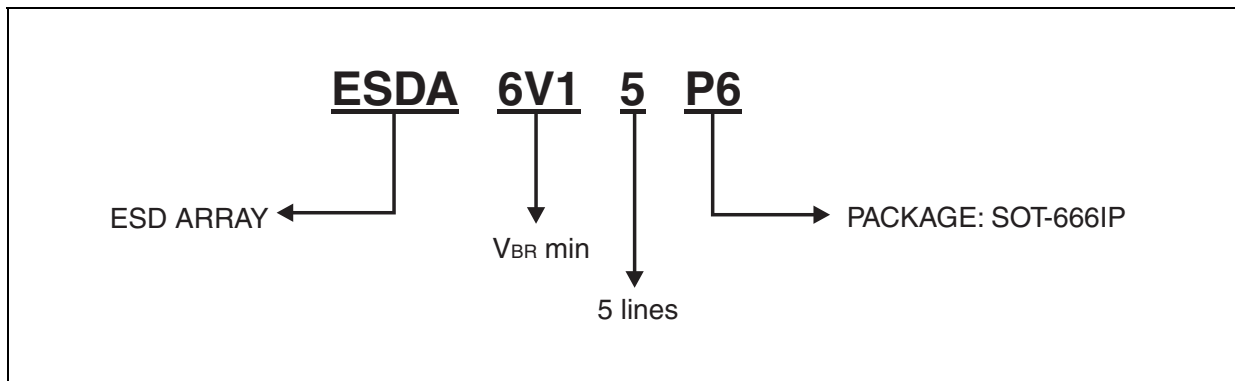


Fig. 8: ESD response @ $V_{PP}=15kV$ contact.



ORDER CODE



ORDERING INFORMATION

Part Number	Marking	Package	Weight	Base qty	Delivery mode
ESDA6V1-5P6	C	SOT-666IP	2.9 mg	3000	Tape & reel

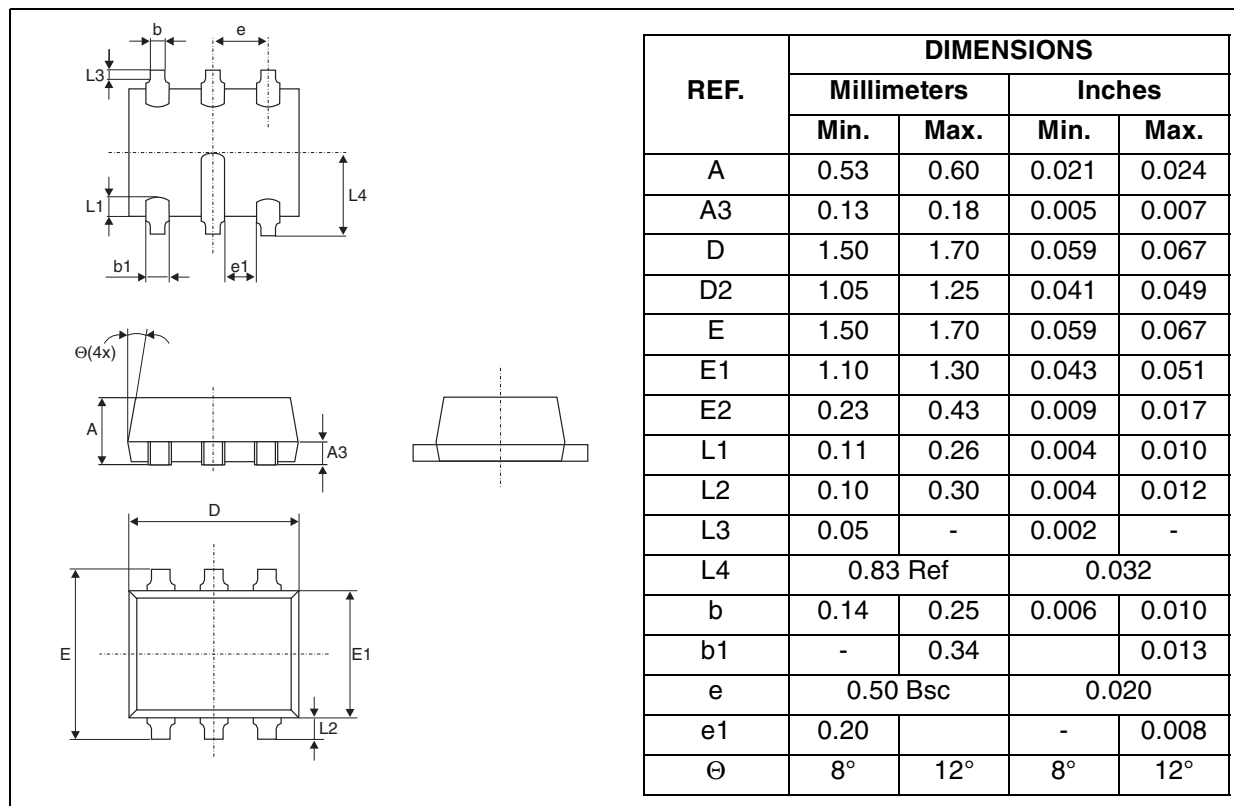
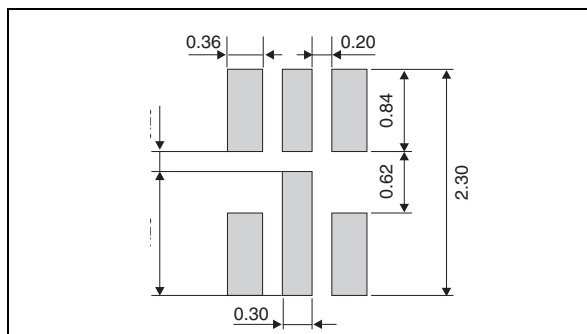
REVISION HISTORY

Table 1: Revision history

Date	Revision	Description of Changes
January-2004	1	First issue
25-May-2004	2	Stylesheet update. No content change.

PACKAGE MECHANICAL DATA

SOT-666IP (internal Pad)

**FOOT PRINT DIMENSIONS (in millimeters)**

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